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Are Assisted Reproductive Technologies Beneficial To, Or Merely Exploitative Of, Women And Their Bodies?

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Abstract
Feminist academia has extensively researched various topics but has given limited emphasis to women's reproduction, especially concerning assisted reproductive technologies (ARTs). This research study aims to explore the effects of assisted reproductive technologies (ARTs) on human reproduction and to examine how these technologies intersect with gender, race, class, and the medicalisation of the body. A detailed examination of medical equipment, including ultrasonography, laparoscopy, the foetal stethoscope, and diethylstilbesterol (DES), indicates that while these tools aid in pregnancy management, they can also pose health risks to women. A feminist perspective views ARTs not only as addressing infertility but also as exploiting women. The discovery illustrates the interconnectedness of race and class in the utilisation of ARTs, namely how these devices tend to increase reproduction in Western nations but primarily promote sterilisation in developing countries. It is imperative to underscore the necessity of rigorous testing of these technologies before their implementation on women to minimise potential health hazards. Despite undergoing testing, ARTs can still result in adverse effects, making it challenging to determine their overall benefits for women's bodies.

Keywords:technology, reproduction, feminism, clinician exploitation.

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Childbirth, a natural biological process, has evolved into a highly technological procedure. This modification has elicited diverse viewpoints from feminist factions. In 2000, Jyotsna Gupta wrote that techniques used to help women get pregnant, like in-vitro fertilisation, ultrasound, laparoscopic procedures, foetal stethoscopes, diethylstilbesterol (DES), and others, should be praised for freeing women from a life of servitude by separating sexual activity from reproduction. In her 2013 publication, Sarah Franklin presents an alternate perspective, suggesting that the concept of independence is exploited to maintain patriarchal dominance and control over women. This manipulation aims to diminish the significance of women or render them insignificant in a societal context where they have traditionally held pivotal roles. The interpretation of these arguments led to the formation of the Feminist International Network Resisting Reproductive and Genetic Engineering (FINRRAGE). This network aims to educate women about the potential risks linked to emerging reproductive technologies. The main objective of this study is to assess whether assisted reproductive technologies (ARTs) provide benefits or exploit women and their bodies. To ascertain this, it poses a key query: Does ART primarily revolve around (in)fertility or the exploitation of women? Examining the transition from a women-centred approach to a medical-centred approach in reproductive matters, this analysis evaluates the advantages and disadvantages. It contends that the intricate nature of assisted reproductive technology (ART) makes it difficult to determine its overall efficacy. While some women may find it highly empowering, others may consider it detrimental to their well-being and social status, showcasing diverse viewpoints.

ART has been extensively studied, focusing on its moral influence on society, especially by examining the ethical, legal, and social implications of ART. Paul Brezine and Yulian Zhao address ethical concerns about the treatment of infertility in medicalised bodies. They argue that this calls for a re-evaluation of societal perspectives on human life, social justice, equality, and the importance placed on genetic progeny (2011, 1). Focusing specifically on Aotearoa New Zealand from 2003 to 2004, Lauren Otterman highlights two unethical practices: the objectification of women's bodies for profit and the transformation of surrogacy into a commercial enterprise (2023, 315). Verma Rajiv agrees, asserting that while assisted reproductive technology (ART) employing surrogacy has offered hope and happiness to numerous families, it raises ethical difficulties in a traditional Indian community where infertility is stigmatised. The use of someone's body for reproduction and financial gain is dubious (Verma, 2023, p. 85). Harkirandeep Kaur highlights the conservative nature of Indian society by pointing out that assisted reproductive technology (ART) poses a threat to the traditional family

structure. This is because ART has expanded beyond the boundaries of the home, involving multiple individuals in the process of childbirth, which was previously considered a private matter of sexuality and procreation (3653). One may contend that this is an accurate portrayal of conventional Indian society. However, Kaur's study might draw criticism for endorsing the exclusion of sexual identities that are not socially sanctioned. Ijeoma Ezeome, Simisola Akintola, and Ayodele Jegede highlight several significant issues in the field of ART in Nigeria, including insufficient funding, inadequate sharing of information, limited involvement in decision-making, and gender-based suffering (2023, 659). They also examine the global variations in guidelines and approaches to these issues. The authors argue that these factors contribute to a phenomenon called reproductive stratification', where certain groups of people are empowered to have children and continue their lineage, while others are marginalised and disempowered (Wilkinson, Mumford, & Carroll, 2023, p. 3).

Expanding on the topic, Zairu Nisha (2021, 133) acknowledges that the talks based around assisted reproductive technology (ART), while significant, are fragmented and insufficient in resolving maternal difficulties. Nisha proposed the idea of an egalitarian society in which many forms of science and technology coexist harmoniously while upholding the dignity of women and all life on Earth. This suggestion was made after discussing the influence of ART on the maternal self (Nisha, 2021, p. 147). This initiative, however, engages in a conversation with Nisha by emphasising that achieving such a utopian world requires active effort rather than just desire. The relevance of FINRRAGE, a whistleblower branch of feminism, rests in its mission to raise awareness among women about the risks associated with these technologies and advocate for legislation to ensure the accountability of these technology companies. The purpose of this article is to assess the benefits and drawbacks of assisted reproductive technologies (ARTs) to gauge their feasibility and implications.

A shift From Women-Based to Medical-Based Reproduction

The nineteenth century witnessed a significant shift in the regulation and administration of childbirth (Oakley 1987, 37). Since the ground-breaking introduction of in vitro fertilisation (IVF) in 1978 in the UK, millions of babies have been born worldwide using this notable assisted reproductive technology (ART) procedure (ESHRE, 2020). Over time, ARTs have continued to advance and expand, now including techniques such as egg freezing and intracytoplasmic sperm injection (Carroll, 2019). The rise of assisted reproductive technologies (ARTs) shifted from using personal experiences to relying on scientific evidence and technology for reproductive advancements. This results in a transfer of power from the patient to the physician, where the patient's subjective experiences are considered to be less important compared to the physician's objective evidence. In this context, gynaecologists prioritise empirical evidence and statistical data over women's subjective bodily sensations during pregnancy as a means of obtaining information (Cranny-Francis et al., 2003, 194). According to this assessment, the doctor's advanced technological gadgets appear to supplant the patient's subjective evidence.

Contrasting premodern and modern societies reveals a significant shift in how women's pregnancy experiences are viewed. This is in contrast to the present period. In ancient times, expectant mothers were typically relied upon to possess sufficient understanding regarding their expected delivery date, the level of activity exhibited by the foetus in their womb, and any other sensations associated with pregnancy. Placing confidence in women's overall emotions during pregnancy empowers women to have authority over reproduction. It compels expectant mothers to take active responsibility for their unborn infants. The presence of control is apparent in the manner in which women opt to give birth in their own homes and use the assistance of unlicensed healers with whom they have established partnerships (Chamberlain 1981). Without a doubt, the patriarchy uses these experiences to oppress women, and the goal of ART is to lessen their impact. Jyotsna Gupta argues that the development of contraceptive technologies has made it possible to have sex without the risk of reproduction. This breakthrough allows for reproduction to occur without the need for sexual intercourse (Gupta, 2000, 13). On the other hand, Sara Franklin suggests that the use of technology in replication is intriguing because the images represent a need for knowledge (2013, 1). Zairu agrees, acknowledging that the incorporation of technology into biological processes appears to be a familiar and promising method for regulating and reconstructing human life (2021, 135). I engage in discourse by highlighting that although ARTs may be considered "hope technology" (Franklin, 1997) due to their potential to offer perceived sexual and reproductive freedom, it is important to note that they also appear to suppress unique women's experiences, which is a common exercise of power.

Transitioning from prioritising women to prioritising medicine aligns with Michel Foucault's concept of 'Bio-Power' (1984), which involves controlling bodies and life to govern the population. According to Foucault, the fundamental purpose of surveillance is to exert control over individuals' physical presence. This is evident in the hospital's architectural style, which features open floor plans and wide corridors. These features facilitate efficient patient observation and enhance the accuracy of treatment procedures (1984, p. 190). This finding has the impact of creating controlled reproductive organs that are capable of supporting pregnancy.

Continuing this monitoring process results in the implementation of ultrasound technology during and following pregnancy. Ultrasound scans, a form of medical imaging used to inspect the baby, have become an

effective tool for obstetricians to monitor and regulate reproduction (Petchesky 1987, 66). This reduces women to mere objects of observation and experimentation by doctors and medical students (Versluyen, 1981; Irigaray, 1981; Kuhn, 1982; Kaplan, 1983). By utilising ultrasound technology, gynaecologists are able to accurately determine the date of the last menstrual cycle and the expected delivery date, which significantly improves their reliability. Due to their strong belief in the reliability of this method, medical professionals may be inclined to dismiss women's accounts of their pregnancies as mere folklore. Although they engage in infrequent discussions about their experiences, it appears that they do not rely on these experiences as the foundation for their therapies. They primarily rely on the reports of these ARTs for their treatment.

Technological advancements contribute to a rise in hospital deliveries. According to the UK Office of National Statistics (2021), the number of hospital births in England and Wales has been increasing every year since 2015. In the year 2021, there were a total of 624,828 live births, which is a 1.8% growth compared to the previous year's count of 613,936. According to MacDorman and Declercq (2019) and NASEM (2020), hospitals hosted 98.4% of births in the United States in 2017. As hospital deliveries grow, males who use assisted reproductive technologies (ARTs) are taking an active role in the process of childbirth and exerting control over women's bodies (Raymond 1987, 69). Although one could interpret this as a positive indication, suggesting the potential harmony between men and women as essential figures in reproduction, the action indicates the ongoing efforts of patriarchy to maintain control. In order to uphold this position, patriarchy, in collaboration with medical professionals, promotes the notion of "baby's best interest." This perspective not only deprives women of their reproductive rights but also downplays the risks that mothers face during the process of reproduction while emphasising the safety of the baby. As the focus shifts from the mother to the baby's safety, attention is increasingly placed on the latter. Next, the advantages of ARTs will be explored within this context.

Arts and The Benefits

Assisted reproductive technologies (ARTs) are designed to assist infertile couples in conceiving children and prevent unintended pregnancies. In the last twenty years, numerous anthropological studies conducted in Egypt, Iran, Lebanon, Turkey, and the UAE have provided evidence of the influence of Assisted Reproductive Technologies (ART) on marriages where infertility is an issue (Inhorn 1994, 1996, 2003a, 2006, 2012a, 2015; Iran Tremayne, 2006, 2009, 2012; Abbasi-Shavazi et al., 2008; Clarke, 2006, 2009; Gürtin, 2012, 2013). Infertile couples often feel intense mental distress, including anger, sadness, guilt, suicidal thoughts, and social stigma (Greil et al., 2010; Todorova and Kotzeva, 2006). Assisted reproductive technologies (ARTs) have unquestionably provided hope for many individuals in this situation. The rise of assisted reproductive technology (ART) in the Middle Eastern region has been linked to the significant advantage it offers couples in terms of enhancing marital connection. According to Inhorn (2003a) and Gürtin (2014), this advantage is based on the shared desire to have a "test-tube baby" together.

The Human Fertilisation and Embryology Authority (HFEA, 2021) reports that the total birth rate for in vitro fertilisation (IVF) in the UK is 23%. Assisted Reproductive Technologies (ARTs) encompass a diverse array of reproductive procedures that aid in achieving conception and hence address issues of infertility (Horn and Patrizio 2015). Reproductive procedures employ medicines like Clomid, human chorionic gonadotropin (hCG), follicle-stimulating hormone (FSH), and human menopausal gonadotropin (hMG) to induce ovulation. In addition to fertility medications, laparoscopic equipment is used to identify obstructions in the fallopian tubes and other medical conditions. Additionally, it can be used to identify and eliminate fully developed eggs from the uterus (Gallagher 1987). By employing this method, it becomes feasible to fertilise the egg externally and simultaneously address the issue of infertility. According to John Stangel, the most desirable news for couples who are unable to have children naturally is to be told, "Congratulations, the pregnancy test is positive." The statement "You are pregnant" was made in 1988 on page 211. Undoubtedly, the ultimate success criterion for IVF is the occurrence of a live delivery. The overwhelming evidence of countless couples experiencing immense happiness as they conceive and give birth to their own miraculous kids serves as a testament to the effectiveness of this procedure.

The implementation of artificial insemination using donor semen (AIDs) in the 1930s is an example of how assisted reproductive technologies (ARTs) have contributed to the advancement of pregnancy. This method allows women who are capable of reproduction and whose partners have a low number of sperm cells to achieve pregnancy by using donated sperm. This provides a remedy for "male infertility" (Pfeffer 1987, 93). This allows for conception to occur without sexual intercourse. Lesbians have been able to produce biological pregnancy without engaging in heterosexual intercourse with the use of assisted reproductive technologies. Therefore, ARTs play a crucial role in ensuring reproductive independence. Additionally, women who are unable to conceive have the chance to experience the happiness of becoming moms with the assistance of surrogate mothers. Homosexual individuals can also have children through the use of surrogate mothers. Therefore, a surrogate mother undergoes pregnancy and childbirth and subsequently relinquishes the child to the intended

parents (Zipper and Sevenhyjsen 1987). Artificial insemination entails fertilising a surrogate mother's egg with the intended father's sperm and transferring the resulting embryo into the surrogate mother's uterus.

ARTs, or Assisted Reproductive Technologies, are crucial as they guarantee the well-being and protection of the developing embryo or baby. This is achieved through rigorous screening conducted during pregnancy (Farrant 1985). The primary focus lies on ensuring the safety of the developing embryo or baby. In order to achieve this, obstetricians employ genetic engineering to monitor the development of the unborn child in the womb. Therefore, sophisticated technology like ultrasonography and foetal stethoscopes is utilised to ensure this safety. Medical professionals use ultrasound technology to track the development and determine the gender of the foetus. Doctors commonly use a form of foetal monitoring to measure the foetal head and discover any abnormalities (Oakley 1987). According to Hoskins and Homes in 1984, identifying abnormalities in the early stages of pregnancy gives prospective parents the option to terminate the pregnancy or continue with it. With non-reproductive technologies (NRTs), couples have the option and advantage of selecting the characteristics of their offspring and determining the sex of the child (Petchesky 1987, 71). Prior to or during pregnancy, sex determination can be achieved through the process of sperm washing (Rowland, 1985). As a result, assisted reproductive technologies (ARTs) offer greater potential for creating exceptional offspring, leading to a decrease in the occurrence of pregnancy abnormalities. Undoubtedly, the process of determining one's sex is a matter of ethical concern. Although it is not inherently problematic to determine the gender of a newborn, it becomes an ethical concern when this knowledge is used as a justification for terminating an unwanted child.

ARTs are crucial during delivery as they guarantee the safety of both the mother and the baby's lives. During childbirth, doctors use ultrasounds and foetal stethoscopes to monitor and guide the progress of labour and delivery. This monitoring is crucial since it corresponds to the most pivotal stage of pregnancy. That is why medical professionals focus significantly on both the mother and the child during this period. Obstetricians, with their extensive expertise in assisted reproductive technologies (ARTs), assist pregnant women during childbirth. This assistance is provided through many means. Doctors can assist by initiating labour and, where necessary, providing a caesarean section, particularly in cases where there is a risk to the mother's life. In 2021, statistics from the United States show that approximately 32.1% of live births were delivered through a caesarean section. Among these, the rate of primary caesarean deliveries was 22.3 per 100 live births for women who had not previously undergone a caesarean delivery. Additionally, the rate of vaginal births after a previous caesarean (VBAC) was 14.2 per 100 live births for women who had previously undergone a caesarean delivery. These rates are calculated based on all live births (PeriStats, 2022). The data from 2019 to 2021 in the United States shows that caesarean delivery rates varied by race. The highest rate was 36.0% for black newborns, then 32.7% for Asian/Pacific Islanders, 31.0% for whites, and 29.0% for American Indian/Alaska Natives (PeriStats, 2022).

Apart from aiding fertilisation, technological devices like diaphragms, intra-uterine methods, sterilisation, abortion, and condoms serve to prevent fertilisation or the attachment of an egg to the uterus. Doctors use hormone-suppressing contraceptives like Norplant and Depo-Provera to prevent pregnancies. Condoms are effective in preventing sexually transmitted diseases (STDs) like AIDS and other venereal diseases. These contraceptive devices facilitate family planning by preventing unwanted pregnancies and helping to regulate the spacing between children. These technologies seem to relieve women from the responsibilities of parenting as they pursue their careers and enhance their sexual activity. However, some feminists express caution about the impact of these technologies on women.

Demerits of ARTs Through Feminist Lens

Discussions about art from a feminist perspective are intricate and lack a unified position. Feminists exhibit significant divisions over the social implications of motherhood and the relationship between maternal authority and patriarchal systems that shape gender prejudices across other dimensions, including race and class. While some view technologies as having the ability to liberate, others see them as not only posing risks to women's physical and mental well-being but also as tools of male dominance over women's maternal identity. The diverse orientations to relationships towards technology, medical authority, and nature can be seen in the dissecting postures observed in both theoretical and practical disagreements. Significantly, the presence of conflicting social identities and perceptions of influence interactions complicates the process of formulating a coordinated response to either the expanding fertility industry or proposed government policies (Donchin 2015, 8). However, these opposing disciplinary, political, and theoretical focuses appear to have increased the complexity of feminist discussion.

De Beauvoir argues that the availability of birth control and legal abortion allows women to have control over their pregnancies, which in turn separates the previously linked roles of sex and reproduction (De Beauvoir, 1949 [2009], 49, 139). According to Beauvoir (1949 [2009], 141], technologies can (1) liberate women from biological constraints, (2) decrease the number of pregnancies, and (3) improve women's quality of life by advancing artificial insemination. Expanding on the topic, Firestone argues that the concept of biological

motherhood is the foundation of women's oppression. Recognising this, feminists should endorse the use of assisted reproductive technologies (ARTs) to emancipate women from the constraints imposed by biological factors (1970). Firestone argues that technologies should be commended for eliminating the power imbalance between genders and replacing the burdens of pregnancy by erasing biological distinctions. These actions are seen as liberating for women. Marge Piercy explores the idea that women might find hope in the arts as a means of breaking down barriers between different artistic genres and civilizations. She also suggests that advancements in genetic engineering, which allow for procreation outside of the body, can help to eliminate racial inequalities. Therefore, Piercy asserts that ART has the potential to address the woman's inquiry by offering solutions to issues of sexism and racism.

In addition to the potential for liberation that ARTs offer, several feminists have expressed concerns about the safety of people in a society where misogyny is prevalent and the supremacy of technology. Nisha (2021, 139) emphasises that technology conveys "vision and values" that hold importance within a particular civilisation where it originates. Consequently, it becomes challenging for technology to function as an "objective and value-free tool." Nisha's perspective is crucial given that males, who hold the authority, are mostly responsible for the creation of the majority of these advanced technologies.

In her book "Mother Machine: From Artificial Insemination to Artificial Wombs" (1985, 3), Gena Corea explores the concept of social power interlock in technology production. She emphasises that discussions about "rights" and "choice" can only occur in a society where there are no significant power differences between individuals. However, Corea concludes that in situations where power imbalances exist, coercion, both subtle and overt, is likely to occur. Shelley Minden agrees, emphasising the exploitative character of these technologies in every aspect of women's lives, regardless of their sexual inclinations, whether they choose to have children, choose to be childless, or are in menopause. In Minden, women face the danger of being transformed into "TEST-TUBE WOMEN" and subjected to various forms of control. These include technological interventions during pregnancy, legal regulations that treat the foetus and the pregnant woman as separate patients, and workplace policies that exert pressure on female employees to undergo sterilisation (1985, 3). Wilkinson, Mumford, and Carroll (2023) emphasise that sterilisation is a direct result of workplace policies and processes that severely disadvantage employees. Burgess et al. (2019), AmeetaJaga and ArianeOllier-Malaterre (2022), and Van Doorn et al. (2022) highlight that small and medium-sized enterprises (SMEs) are leading the way in such behaviours, particularly by placing significant pressure on their predominantly female staff to achieve high levels of productivity without enough assistance.

Considering that ART is a device that carries inherent values, feminists should inquire about the safety and prevalence of these technologies. One example is in vitro fertilisation (IVF), which began with testing on animals such as mice, rats, sheep, and cows and then advanced to human women (Corea 1985). Administering IVF to women without first verifying its safety for human lives poses a risk to women's well-being. Suzanne Wymelenberg highlights that ethical concerns related to reproductive technology have experienced a transition from the 1980s to the 1990s, shifting focus from the safety of the technology itself to its application and potential consequences. According to Wymelenberg, during the 1980s, the primary question about technology was whether it was morally acceptable to create life in a container. During the 1990s, advancements in technology allowed scientists to analyse the DNA of embryos. This led to ethical discussions focusing on the boundaries that should be established for manipulating embryos.

On the other hand, Linda Beckman and Marie Harvey (2005, 1) argue that ARTs should undergo the same assessment as any other product: can women use them accurately, and will they use them? For a thorough evaluation, it is essential to consider not only the technology itself but also the individuals seeking to use it and the contextual factors influencing its application. As technologies have advanced, it is necessary to periodically evaluate their safety to ensure they are used correctly. Ectopic pregnancy (EP) is a potential risk that women may encounter during an IVF procedure. These opponents argue that the risk element mentioned has led to a demand for a reassessment of the usefulness of IVF for women (KaraerAvsar and Batioglu, 2006; Chang and Sub, 2010; Malak, 2011; Perkins et al., 2015; Esmaeilzadeh et al., 2012). Regarding risk factors for ectopic pregnancy, Cheng Li et al. (2015) emphasise that "in vitro fertilisation with embryo transfer (IVF-ET) and current intrauterine device (IUD) use are the primary factors contributing to the occurrence of ectopic pregnancy." Special consideration should be directed towards women experiencing tubal infertility who have received IVE-ET treatment. Through the identification of IVF-related EP, recent studies seem to challenge Wymelenberg's belief that worries over the safety of these procedures are no longer relevant.

According to Laborie (1987), fertility medicines including Clomid, HMG, and HCG are considered the most dangerous forms of "hormonal stimulation treatments" while being commonly used in IVF procedures. Considering the inherent hazards connected with ovulatory inductors, such as breast cancer, belly bloating, abdomen pain, headache, breath gasping, and overall discomfort, it is advisable to discontinue their usage (Wood 1984; Pfeffer and Woollett 1983; Henrieta et al. 1984; Kovacs et al. 1984). According to a study by Motherhood without Borders (2023, 1), the side effects of IVF can vary in severity. Research has indicated that

there is an elevated risk of endometrial cancer in women with polycystic ovary syndrome and those who are overweight due to hormonal stimulation.

Mental disturbances can also occur, potentially leading to the development of depression. According to the study "In-Vitro Fertilisation Impact on the Risk of Breast Cancer: A Review" by DariushFarhud et al. (2021, 438), women who experience infertility and receive hormone therapy are at a higher risk of developing breast cancer due to the likelihood of having thick breasts. A study was conducted on 43,313 women to evaluate the correlation between ovulation-stimulant medications and mammographic breast density in the case of Farhud. According to a study conducted in 2021, women who reported infertility had a higher concentration of dense tissue in their breasts due to regulated ovarian stimulation. This increase in density can potentially impact the likelihood of developing breast cancer. It is crucial to understand that in the normal IVF process, medications such as clomiphene citrate and gonadotropins (including human chorionic gonadotropin and human menopausal gonadotropin) are used to speed up the growth of multiple follicles and stimulate ovulation (Sovino et al., 2002). However, this ovarian stimulation can lead to an increase in endogenous oestrogen, which has been associated with an increased risk of cancer (Klip et al., 2000; Lerner-Geva et al., 2006; Farhud, 2019). More so, the incidence of breast cancer is equally high among women who have undergone in vitro fertilisation (IVF) for more than six months and have been routinely exposed to human menopausal gonadotropin (HMG) but have not conceived (Burkman et al., 2003). According to Travis (2003) and Brinton (2007), the IVF method, particularly when using diethylstilbesterol (DES), triggers hormonal factors that have a significant impact on breast cancer.

DES, an artificial female hormone oestrogen, was supplied to pregnant women between the early 1940s and late 1970s to avoid miscarriage, premature labour, and other pregnancy-related issues, similar to other fertility medications during that period. It typically requires approximately thirty years of usage for DES to be identified and verified as a contributing factor to breast, cervix, uterine, and vaginal cancer in women who have been exposed to it (Orenberg 1981; Huo et al. 2017). Anita Direcks emphasises that despite the knowledge of its inefficiency and potential dangers, some practitioners continue to prescribe it to expecting mothers as a preventive measure against miscarriage. This is due to a lack of scrutiny about the safety of DES use during pregnancy. This approach towards pregnant women exposes them to health risks, and what is even more concerning is that these medications are administered to them without sufficient assessment of their safety. Furthermore, even after its discovery, medical experts take considerable time to cease its administration. There seems to be a lack of concern regarding the safety of these pharmaceuticals for women, and it appears that society is too consumed with other pressing matters to acknowledge the harm they may cause to women's health.

Professionals have been prohibited from using the medicine for several decades. Nevertheless, the long-term health consequences of this issue continue to affect the current generation. Specifically, pregnant women who have been exposed to DES are more likely to develop breast cancer later in life compared to women who have not been exposed to it. DezhengHuo et al. looked at 720 cases of women who were exposed to DES from the Cervical Clear Cell Adenocarcinoma (CCA) registry at the University of Chicago until 2014. Their 2017 article is called "Incidence rates and risks of diethylstilbesterol-related clear-cell adenocarcinoma of the vagina and cervix: Update after 40-year follow-up." The authors specifically focus on calculating the occurrence rates and cumulative risks for CCA among white women born in the U.S. between 1948 and 1971. Huo et al. found that out of the 420 documented cases of clear cell adenocarcinoma (CCA), 80% of them were women between the ages of 15 and 31. However, some cases occurred as late as age 55. The study also revealed that the risk of DES-related CCA was highest among individuals born between 1951 and 1956. This birth cohort effect was closely linked to the use of DES prescriptions in the United States over time (Huo et al., 2017, p. 566).

In addition to DES, ultrasound scans are another advanced medical gadget that offers potential risks to women's health. Ultrasound scans were used for almost two decades before the publication of their "randomised controlled trial (RCT)" (Oakley 1987, 48), similar to other technologies. The medical experts' incapacity to determine the safety of these gadgets before their use demonstrates the devaluation of women's bodies (Hynes 1987). These trials show women's bodies as "reproductive bodies in the pursuit of scientific advancement" (Spallone 1987, 167). Ultrasound can have detrimental effects rather than beneficial ones. Ultrasound can pose risks due to the generation of heat, sound, and vibration, potentially resulting in miscarriage, preterm labour, and infant mortality. Upon hearing this sound wave, the developing embryo typically responds by altering its location. Continuous ultrasound examinations throughout pregnancy can lead to the development of cognitive and other abnormalities in the foetus.

Marden Wagner wrote an article in 1999 called "Ultrasound: More Harm than Good." In it, he says that even though ultrasonography is widely used in prenatal care and was first used by Scottish obstetrician Ian Donald in 1955 to treat women with abdominal cancer, it has not been proven to be safe (3). Wagner suggests that it is reasonable to limit the use of ultrasound exams of the foetus to circumstances when the information obtained is expected to have clinical significance. Paradoxically, ultrasound may now be the cause of the problem it has long been believed to be successful at identifying, known as IUGR (Intrauterine Growth

Restriction) (1999, 5). Yaw Boachie-Adjei agrees, emphasising that ultrasound treatment carries inherent risks and should not be used to cure specific ailments. Furthermore, if an individual is pregnant, the treatment may have adverse effects rather than beneficial ones. Therefore, considering the potential harm that therapeutic ultrasonography may have on the development of a human embryo, it would be prudent to refrain from using it during pregnancy (Miller et al., 2012; Boachie-Adjei, 2023).

There is a possibility that certain expectant mothers who have undergone ultrasonography procedures may be unaware of the potential hazards associated with them. Several individuals have great enthusiasm while utilising ultrasound technology to determine the gender of their offspring (Gharekhanloo 2018). They assert that ultrasound imaging facilitates a stronger emotional connection with their baby. Although this assertion may hold validity for certain women, it may not universally apply to all others. For instance, a woman may find it challenging to establish a connection with her newborn after learning from an ultrasound that the baby's gender does not match her expectations. Gender disappointment might impede the development of the foetus and perhaps lead to mental health problems such as postpartum melancholy, anxiety, and depression. Therefore, it can be concluded that ultrasound does not facilitate bonding between the mother and child. Moreover, the regular use of ultrasound provides minimal or no contribution to the enhancement of the foetus or the well-being of the mother (Petchesky 1987, p. 66). It enhances the medical observation, monitoring, and supervision of the foetus. ARTs serve as a platform for medical professionals to assess women's physiological and moral appropriateness as hosts for the embryo or foetus (Cranny-Francis et al., 2003, p. 194). It appears that the examination of women in this manner is exploitative, although it may not be the deliberate purpose of certain medical practitioners. Nevertheless, expectant moms must carefully evaluate the potential hazards and advantages associated with ultrasound exams before making a decision.

From a feminist perspective, the prioritisation of embryos over pregnant women is a significant concern (McLeod and Baylis 2006). This is especially concerning because the needs of the foetus take precedence over the effects on these women's bodies when developing new reproductive or contraceptive technologies. Julien Murphy raises concerns about ectogenesis and its potential to contribute to the subjugation of women by granting rights to the foetus during pregnancy (1989, 66). Michelle Stanworth expresses concern about the ongoing disregard for the well-being of pregnant women. She highlights the case of Nicola Bell, who was born in October 1986 to a woman who was assumed to be brain-dead. Stanworth argues that this case demonstrates how reproductive technologies can allow doctors to have a closer connection with the foetus, potentially putting women's lives at risk (Stanworth 1987, 28). The 1984 British Parliamentary Warnock Committee report is a notable example of focusing more on the handling of embryos than the impact of the technique on women (Gallagher 1987). Many critics have questioned whether the Warnock committee is unaware of the effects that certain high-tech devices have on women's bodies, indifferent to the struggles faced by women, or attempting to exert patriarchal control over reproductive power by reducing women to mere observers during childbirth (Irigaray 1981; Kuhn 1982; Kaplan 1983).

The emergence of assisted reproductive technologies (ARTs) in human reproduction not only provides hope but also has the unintended consequence of marginalising women from the core of procreation. This is evident in the way women's bodies are subjected to legal restrictions based on the rights of the foetus. In his 2002 article "The Concept of Foetal Rights," Carl Wellman praises the field of medical science for its role in raising awareness about various factors that can harm unborn children. These factors include, but are not limited to, the pregnant woman's illnesses, side effects of her prescribed medication, exposure to environmental chemicals and radiation, the use of alcohol, tobacco, or illegal drugs by the pregnant woman, and genetic defects inherited from the biological parents (Wellman 65). According to Wellman (2002), some doctors, lawyers, and moral philosophers have argued that these advancements have resulted in the emergence of new rights for the foetus. According to this legal principle, the foetus seems to have greater rights than the mother. If the mother is found to have engaged in socially inappropriate activity during pregnancy, she might be sued for prenatal negligence (Gallagher, 1985, 1987). For example, a woman can be involuntarily admitted to either a hospital or her own home to address foetal abuse, which includes activities such as smoking and consuming alcohol during pregnancy. Due to the perception of her unhealthy behaviour, her body is subjected to surveillance (Balsamo 1990), with her maternal body being monitored as if it is a "potentially criminal" body (Cranny-Francis 2003, 195).

The infertility industry is progressing by promoting surrogacy, which involves the commercialisation of women's bodies on a global level. Michael Sandel's book "Justice" (2009) delves into the ethical implications of paid surrogacy, analysing it from both a utilitarian and libertarian perspective before providing his own critique. Sandel argues that the utilitarian and libertarian perspectives, which emphasise the benefits for consenting adults, overlook important ethical concerns. Specifically, he contends that the practice of paid surrogacy reduces pregnancy and childbirth to financial transactions. Considering that pregnancy and childbirth are fundamental components of the human condition, compensating for a child diminishes this significance and portrays a surrogate as a mere mechanised baby production facility (Sandel, 2009).

In his book "What Money Can not Buy: The Moral Limits of Markets" (2013, 3), Sandel extends the argument by satirising modern society and emphasising that the commonly held belief that there are things money cannot buy may not be accurate. He points out that in today's society, almost everything is available for purchase, including, but not limited to, the "services of an Indian surrogate mother to carry a pregnancy for $6,250." Sandel argues that Western couples are increasingly hiring surrogates from countries where the practice is legal and the cost is significantly lower than in the United States (2013, 3). Rajiv Verma agrees, stating that after the legalisation of surrogacy in India in 2002 and its subsequent commercialisation, fertility clinics have been taking advantage of surrogates, profiting at their expense and leaving them underpaid (2023, 88).

It is concerning that these fertility clinics, as Verma describes them, take advantage of surrogates by selling their reproductive materials, including eggs, embryos, and other body parts. The freezing of embryos is aimed at extending their viability in order to assist infertile couples in conceiving their desired children. Nevertheless, the primary purpose of freezing these embryos seems to be to benefit reproductive clinics by establishing an embryo bank for research experiments, often without obtaining the approval of the owners (Corea 1985; Laborie 1987). Conducting experiments on these embryos without obtaining consent from the creators portrays women as mere reproductive entities (Dworkin 1983), serving as living laboratories (mobile wombs) that create eggs and embryos necessary for the well-being of the state.

Besides objectification, there appears to be a strong connection between race and class in the implementation of ARTs in communities. In their article "Disparities in Assisted Reproductive Technology Utilisation by Race and Ethnicity, United States, 2014: A Commentary," published in 2017, Ada Dieke et al. emphasise the variations in the use of infertility services in the USA. They found that the highest proportion of utilisation is among well-educated white non-Hispanic women who are financially well-off, earning 300% above the poverty level. Dieke et al. argue that in the United States, race and ethnicity are often associated with socioeconomic inequalities in healthcare access, which can be attributed to residential segregation in certain neighbourhoods that offer limited economic and educational opportunities (2017, 606). Other researchers who contend that the distribution of ART cycles in the United States varied by race between 1999 and 2000 agree with Dieke et al.'s viewpoint. White non-Hispanic women made up 85.5% of the cycles, Hispanic women made up 5.5%, black non-Hispanic women made up 4.6%, and A/PI non-Hispanic women made up 4.5% (Feinberg et al., 2006; Grainger et al., 2004). The data from Fujimoto et al. (2010) indicates that there was a higher percentage of ART cycles for A/PI women (9.8%) compared to black and Hispanic women (both at 6.5%) from 2004 to 2006. Janet Gallagher's previous research highlights the fact that there are certain American counties where impoverished pregnant women struggle to find doctors who are prepared to provide them with medical care through Medicaid, a federally financed programme (1987, 149).

Consequently, these underprivileged women are deprived of access to healthcare due to their marginalised social status. While their middle-class white and black female counterparts are benefiting from employer-provided health insurance plans, the disparity in the implementation of ARTs, specifically concerning race and class, acts as a constraint on the potential benefits that these devices may purport to provide. The unique circumstances in the US may serve as a mirror for other civilisations grappling with similar social divisions.

While Western societies focus on improving reproduction, fertility doctors in poorer countries seem to be more concerned with reducing fertility. Tsui Amy, Brown Win, and Li Qingfeng (2017) emphasise that the average number of children born to each woman, known as the total fertility rate, has decreased from 6.5 births per woman in the 1960s to 2.38 births per woman in southern Africa, 3.05 in northern Africa, 4.52 in eastern Africa, and 5.2–3 in western/middle Africa. Scholars argue that this diversity is indicative of the contraceptive push in these regions. Erin Clarke argues against the notion that healthcare personnel committing "coerced [...] tubal ligation procedures" on Indigenous women from Alberta, British Columbia, Ontario, the Northwest Territories, and Saskatchewan constitutes an act of "genocide" and a type of "torture" (2021, 144). Wendy Salvage concurs, emphasising that forced sterilisation is extremely cruel because medical professionals carry it out without adequately informing patients about the risks or the possibility of reversing the procedure (1982, 293). Salvage concludes by criticising international organisations for allowing certain doctors to continue treating women despite their strong racial, sexual, or class biases.

Western societies don't like the drugs Depo-Provera and Norplant, but they are used to sterilise women in developing countries like India and Bangladesh. This demonstrates that there are disparities in medical care that the entire world needs to consider (Clark 2021; Spallone and Steinberg 1987; Rakusen 1981; Bunkle 1984). In Bangladesh, women have been provided with incentives such as monetary rewards, clothing, and food to undergo sterilisation under the pretext of population control (Akhtar 1987, 158). Frequently, family planning workers fail to provide these incentives to impoverished women after sterilisation. Agents who promote female sterilisation also receive financial incentives based on the number of women they recruit. The government of

Bangladesh, in collaboration with USAID and the World Bank, promotes the practice of sterilisation across the entire country. Sultana Kamal (1987, 151) notes that the health report reveals that all 21 women who are using Depo-Provera are experiencing severe side effects, such as excessive and prolonged bleeding. When these women seek medical assistance, doctors advise them to improve their diet and assure them that these side effects are considered "normal." This is the unfortunate destiny that women in developing nations face.

CONCLUSION

Doctors and some feminists have hailed assisted reproductive technology (ART) as a potential saviour for humanity because it enables fertile people to control the timing of their pregnancies and aids infertile couples in conceiving their own genetically ideal children. Technologies have a significant ability to assist doctors in efficiently managing pregnancy, thereby saving the lives of both the mother and child. Nevertheless, despite its numerous promises, ART possesses certain fundamental weaknesses that necessitate careful examination. While certain feminists have fully embraced assisted reproductive technologies (ART) without any hesitation, others approach these modern techniques with varying levels of scepticism, particularly regarding the potential risks they may pose to women's health. For example, certain women may experience relief when undergoing ultrasound examinations, while others may feel stressed as a result. The effects of ARTs can vary, with some women experiencing benefits while others may experience drawbacks. Furthermore, since the majority of these technologies are not adequately tested prior to being applied to women's bodies, they ultimately subject women to various health risks. Even when contraceptive medications administered to women in developing countries undergo thorough testing, they can still have side effects. This complicates the determination of whether ARTs are advantageous to women's physiological well-being. Therefore, it is necessary to clarify which specific women we are referring to when we discuss their positive or negative impact.

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